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ABSTRACT

An adequate description of the infrastructure system of adult literacy education needs to address three levels: national, state, and local. At the national level, infrastructure is currently shaped primarily by the Adult Education Act (AEA), amended by the National Literacy Act of 1991. Given that the AEA is a state grant program, state literacy policy is critically important for an understanding of infrastructure. All states maintain a state adult literacy education office headed by an official designated as the state director. The local level is the point at which adult literacy instruction takes place. The state of development of local infrastructure varies considerably, one important variable being program size. The infrastructure for adult literacy education is at best rudimentary. Development has been constrained by insufficient funds, the prevalence of part-time programming, service fragmentation, and structural marginality. This has had a deleterious effect in three important areas: local programs' capacity to innovate and develop, the transmission of knowledge and critical information, and knowledge production. Infrastructure issues raised by recent legislative initiatives in Congress are block grants, resources, and eligibility for service. For improvement to occur, three things must happen: increased capacity at the local program level, strengthening of structures, and enhanced coordination and integration. (Contains 30 references.) (YLB)

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NCAL

NATIONAL CENTER ON ADULT LITERACY

THE INFRASTRUCTURE OF ADULT LITERACY EDUCATION

IMPLICATIONS FOR POLICY

Hal Beder
Rutgers University

NCAL Technical Report TR96-01
April 1996

U.S. DEPARTMENT OF EDUCATION
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THE INFRASTRUCTURE OF ADULT LITERACY EDUCATION

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Hal Beder
Rutgers University

NCAL TECHNICAL REPORT TR96-01
APRIL 1996

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TABLE OF CONTENTS

Table of Contents	*i*
Author	*ii*
Abstract	*iii*
Introduction	1
The Infrastructure System	2
Factors That Affect Infrastructure	5
Consequences of a Weak Infrastructure System	10
Issues Raised by Recent Legislative Initiatives	14
Conclusions and Recommendations	16
References	*19*

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THE INFRASTRUCTURE OF ADULT LITERACY EDUCATION

IMPLICATIONS FOR POLICY

Hal Beder
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Abstract

This report examines the infrastructure of adult literacy education in the United States. It begins with a description of the infrastructure system at the national, state, and local levels and then discusses contextual features that affect the system such as inadequate resources, use of part-time staff, fragmentation of service, and structural marginality. After concluding that the infrastructure system in adult literacy education is weak, the report discusses the consequences of this weak infrastructure, which include low capacity to innovate and develop at the local level, inhibited transmission of knowledge and critical information, and insufficient knowledge production. Infrastructure issues raised by recent legislative initiatives in Congress are discussed. The paper finishes with conclusions and recommendations pertinent to improving capacity at the local program level, strengthening structures, and enhancing coordination and integration.

INTRODUCTION

Picture a map of adult literacy education in the United States. Scattered about the terrain are the organizations and agencies that do the work of adult literacy education. We see local programs that conduct adult literacy education, state agencies that allocate funds and monitor and support local programming, and knowledge production agencies that conduct and disseminate research and development. As we look carefully, we see that to one degree or another, these organizations and agencies are linked to each other through channels through which transactions take place. While in some cases, these channels look like superhighways capable of carrying a great deal of traffic, in other cases they look like small lanes and dirt roads. In some cases, there are no channels at all connecting agencies, and in others, the channels are so snarled and confused that wayfarers are likely to get lost.

When experienced travelers are asked about the accuracy of our map and their experience with the journey we wish to take, they tell us that the agencies and organizations depicted and the channels between them change so quickly that our map is likely to be somewhat outdated. Furthermore, they note that there are a number of factors that can either facilitate or impede our trip. In some places, there is traffic grid-lock; in other places, the channels are in ill-repair or are poorly marked. They tell us that if we want to avoid the difficult places, and we have enough money, we should take a plane. If we know folks in the area, they can help us when we get lost, and most importantly, if we try hard enough and long enough, we will get there sooner or later.

The agencies and individuals that have been depicted in the above analogy, together with the interconnecting links through which transactions take place, are in this paper referred to as *infrastructure*. As can be seen from the analogy, without adequate infrastructure, transactions within the adult literacy education system may become waylaid, be aborted, or even fail to take place.

The creation of an adequate infrastructure is critical for the development and effectiveness of adult literacy education because the infrastructure system provides vital functions. For example, agencies such as the U. S. Department of Education and state literacy offices engage in strategic planning, policy formation, resource allocation, and program monitoring. Organizations such as the National Institute for Literacy (NIFL) and the National Center on Adult Literacy (NCAL) are charged with knowledge production and dissemination. State and national adult literacy education professional associations create channels of communication and staff development. Local adult literacy providers establish structures through which teachers can communicate and work together.

The examination of infrastructure in adult literacy education will begin with a description of the adult literacy education infrastructure system followed by a discussion of some of the contextual factors that affect the system. The paper will then address the consequences of a weak infrastructure system, which include local programs' reduced capacity to grow and develop, the impaired transmission of knowledge, and reduced critical information and knowledge

production. Prior to a section on conclusions and recommendations, the paper will discuss issues raised by several current legislative initiatives.

THE INFRASTRUCTURE SYSTEM

THE NATIONAL LEVEL

An adequate description of the infrastructure system needs to address three levels: national, state, and local. At the national level, infrastructure is currently shaped primarily by the Adult Education Act (AEA), which was amended by the National Literacy Act of 1991 (Public Law 102–73). As the AEA stipulates, adult literacy education is primarily a state grant program. Funds are allocated to the states according to the percentage of their population over the age of 16 that is no longer required to attend school and lacks a high school diploma. These funds are then disbursed by state education agencies (SEA) to the local education agencies that conduct instruction. At the federal level, the Department of Education's Division of Adult Education and Literacy (DAEL) administers the Act. DAEL is attached to the Office of Vocational and Adult Education (OVAE).

The Act stipulates that 15% of the state grant must be allocated to staff development and special innovative projects and that two thirds of this 15% must be allocated to staff development. Thus provision of a rudimentary research and development system and staff development are mandated by law. Only 5% of the state grant may be used for administrative expense.

The Act, as amended in 1991, established the National Institute for Literacy (NIFL), which is charged with basic research and development, communication, and coordination functions (PL 102–73, sec. 3(d) A–G). It also established state analogues of NIFL called state literacy resource centers (SLRCs) and strengthened state advisory councils by making them responsible to state governors. Thus, particularly after its 1991 amendments, the AEA does provide for many basic infrastructure elements. The problem is that most of the newly created elements lack the resources to make a substantial impact. In FY 1994, funding for NIFL was only $5 million, and funding for all SLRCs combined stood at $7.8 million (Speights, 1993). Thus, while the language of the legislation creates the potential for infrastructure development, the current appropriations keep capacity at a minimum.

Although the Adult Education Act has been amended many times since its passage in 1966 (Rose, 1991), the basic purpose, structure, and administration of the Act have not changed substantially since its inception. With the advent of a Republican-controlled Congress in 1995, however, major changes are likely both in the provisions of the Act and the funds allocated to it. While at this point, it is impossible to predict the form these changes will take, the issues raised by proposed changes are important and will be discussed in a subsequent section of this paper.

There are several national professional associations that are important components of the national infrastructure. These associations advocate adult literacy education and serve as a communications network for adult literacy professionals. The American Association for Adult and Continuing Education (AAACE) holds an annual conference and publishes a newsletter and two scholarly journals. The Commission on Adult Basic Education (COABE), which is attached to AAACE, focuses exclusively on adult literacy education. It, too, holds an annual meeting and publishes a scholarly journal. The National Adult Education Professional Development Consortium (NAEPDC) provides staff development to state directors of adult education and serves as a forum for policy discussion.

THE STATE LEVEL

Given that the AEA is a state grant program, state literacy policy is critically important for an understanding of infrastructure. According to the AEA, federal grants must be administered by a state educational agency. Thus, all states maintain a state adult literacy education office headed by an official designated as the state director. State directors meet at least yearly for an institute sponsored by the federal Department of Education and maintain the National Adult Education Professional Development Consortium (NAEPDC).

State delivery systems are extremely diverse. In states such as Iowa, the delivery system functions exclusively through community colleges, while in other states, public schools are the primary delivery vehicles. State allocations for adult literacy education also vary considerably. In California, for example, the 1990 federal allotment for adult literacy education was $11,953,705, the nation's largest. The allocation of $204,798,040 from the state, however, was 17 times larger than the federal allocation (NAEPDC, 1990). In 1990, California served 1,021,227 learners, nearly one third of all learners served by the nation's adult literacy education system (Development Associates, 1992). Because of California's substantial budget for adult literacy education, it has been able to invest in large-scale infrastructure projects such as the Comprehensive Adult Student Assessment System (CASAS) and The Outreach and Technical Assistance Network (OTAN; Beder, 1995). In contrast, South Dakota received only $615,279 in federal money in 1990, and $94,077 in state money. It served 3,184 learners (NAEPDC, 1990). South Dakota's Section 353 allocation of approximately $90,000 could hardly be expected to finance major infrastructure development.

While all states provide technical assistance and staff development services, the arrangements vary considerably. In some cases, such as Massachusetts, Connecticut, and Illinois, staff development is provided through resource centers. In other cases, it is provided directly from the state office and in still others, universities play a major role. According to the AEA, states may pool their federal and state literacy resource center money to offer regional programs. At least one region, New England, has chosen this course of action.

In the past several years, the structure of adult literacy education has increased in complexity with the advent of significant funding for adult literacy in the JTPA and JOBS programs. Since it is problematic whether low-literates benefit from job training or gain the meaningful employment that would enable them to terminate welfare, the JTPA and JOBS programs frequently contract with adult literacy education programs to provide literacy services. While the

exact amount of funds that flow to AEA-supported adult literacy education programs is unknown, the amount is substantial. Chisman (1990), for example, estimated that JTPA and JOBS funding had augmented federal adult literacy education expenditures from about $100 million in 1987 to nearly one billion dollars in 1989.

At the national level, articulation between the Department of Health and Human Service's JOBS program, the Department of Labor's JTPA program, and the Department of Education's adult literacy program is managed by an interagency task force that lacks substantial authority. At the state level, the level at which funding, programming, and support must come together, there are a myriad of arrangements for articulation. While some states have developed successful mechanisms for developing infrastructure between the AEA-supported adult literacy programs, JOBS, JTPA, and other literacy-oriented programs, most have not.

In most states, there are state adult education professional associations that serve as important networks for communication and affiliation among adult literacy professionals and adult educators in general. Most state associations hold annual conventions, publish newsletters, and are substantially involved in legislative affairs. Some, such as the state associations in New Jersey and Pennsylvania, publish research journals. Many state professional associations are affiliates of the American Association for Adult and Continuing Education.

THE LOCAL LEVEL

The local level is the point at which adult literacy instruction takes place. Data from the National Evaluation of Adult Education Programs (NEAEP) show that in 1990, about 70% of the local programs were administered by public schools and 15% were administered by community colleges. Over three quarters of the local programs enrolled less than 500 learners per year; over a third enrolled less than 100 per year. Over half the programs were located in predominately rural areas. At the local level, the overwhelming majority of the adult literacy teachers worked part-time (80%) and were certified as elementary or secondary school teachers (87%). Although 88% of the local programs reported that their teachers had access to staff development, the amount of staff development received by teachers varied greatly by state and by program (Development Associates, 1992). As Beder (1991) notes, the close connection between elementary and secondary education and adult literacy education has substantially influenced adult literacy curriculum and the professional norms of its teaching force.

The state of development of local infrastructure varies considerably, one important variable being program size. As the NEAEP indicated, larger programs were much more likely than smaller programs to employ full-time administrators and teachers, to offer more hours of instruction per week, and to score high on professionalism (Development Associates, 1992). The reason why program size is such a critical variable may well be that the economies-of-scale enjoyed by larger programs enables them to build infrastructure at less cost, while the geographical dispersion of small rural programs makes the development of infrastructure especially difficult.

FACTORS THAT AFFECT INFRASTRUCTURE

There are several contextual factors that affect adult literacy education infrastructure in important ways. They are the amount of resources available to support infrastructure, the prevalence of part-time instructional and administrative staff, fragmentation of service, and structural marginality.

RESOURCES

The issue of resources is critical, since the magnitude of resources available for infrastructure determines whether important infrastructure components will receive funds and what their level of service will be. Furthermore, the level of resources available to local programs affects their capacity to train teachers, to utilize information, and to adopt innovations such as advanced technology. The question of the amount of resources available to adult literacy education, however, is rather murky. Although it is relatively easy to account for state allocations and funding allocated under the Adult Education Act, the resources that flow to adult literacy education from JTPA, the JOBS program, and private sources are difficult to determine accurately because accounting systems and methods of disbursing funds vary considerably among the states (Alamprese, Brigham, & Sivilli, 1992; Young, Morgan, Fleischman, & Fitzgerald, 1994). Moreover, it is difficult to place a dollar value on the time of volunteers or the in-kind donations of space from sponsor agencies.

RESOURCES ALLOCATED UNDER THE ADULT EDUCATION ACT AND BY STATES

In fiscal year 1994, the federal allocation for adult literacy education under the AEA was $304.9 million. Of this amount, $254.6 million was allocated as grants to the states, and the rest was allocated to mandated national programs such as programs for homeless adults ($9.6 million), workplace literacy ($18.9 million), state resource centers ($7.9 million), national programs ($8.8 million), and programs for prisoners ($5.1 million) (Speights, 1993). Of the state grant money that funds local programs, a minimum of 15% must be set aside for special projects and staff development, 10% must be allocated for prison education, and 5% may be used for administration. After the mandated set asides of 30% have been taken off the top of the state grant allocation, $179 million is available nationwide under the AEA for local programming (Beder, 1994).

To the federal allocation must be added funds allocated by the states. In 1992, state allocations to adult literacy education totaled about $657 million (Division of Adult Education and Literacy, 1993). It is important to note, however, that the allocations of four states, California, Michigan, Florida, and New York, accounted for over two thirds of the state total. Federal AEA and state allocations for adult literacy education together total about $962 million.

The absolute amount of funds allocated to adult literacy education is a somewhat misleading figure, however, because the allocation itself does not take into consideration the size of the population served. Focusing on

expenditures per student per year corrects for this problem. Computing expenditure per student per year from data supplied by local programs in 1990, the NEAEP noted that,

> ...overall the mean amount reported as expended per client was $258, with the data from four states indicating expenditures of less than $100 per client and data from another indicating expenditure of $1,120. Our data do not explain the large deviations from the national mean. (p. 84)

RESOURCE DISTRIBUTION

Although the amount of resources allocated to adult literacy education in general, and to infrastructure in particular, is a critical issue, the manner in which available resources are distributed is also an important factor for infrastructure development. One issue has to do with whether scarce resources should be used to maximize program reach and student enrollment by funding many programs and serving as many learners as possible, or whether resources should be consolidated, thus serving fewer students with expanded services at a higher cost per learner. Policies that emphasize funding as many programs as possible often result in a predominance of part-time programs with poor communications infrastructures. Conversely, when funds are consolidated to support full-time programs employing a large proportion of full-time teachers, economies-of-scale make it easier to provide comprehensive supportive services to staff and learners, and it is easier for communications infrastructure to flourish. Anecdotal evidence suggests that, historically, states have followed a policy of maximizing program reach, although many states are reconsidering their position on the issue.

How states distribute their Section 353 money also has an impact on infrastructure. As explained previously, Section 353 of the AEA requires states to spend a minimum of 15% of their state allocation on experimental and demonstration projects and staff development, and 10% of this must be spent on staff development. However, some states, New Jersey and California for example, spend considerably more than the minimum under Section 353 to support infrastructure development and maintenance. Other states such as Massachusetts spend nearly all of their 353 allocation on staff development (Beder, 1995).

It is important to note that resources are not distributed evenly throughout the adult literacy education system, especially in respect to funds that might be allocated to infrastructure. Large states receive larger allocations under section 353 of the Adult Education Act. States such as California, Michigan, and New York, which enjoy large state allocaions for adult literacy, clearly have more to invest.

Certainly available funds can be maximized through efficient distribution. New England, for example, pools its federal funds for state literacy resource centers into a regional staff development network known as SABES, and New York has increased the amount of JOBS funds that flow to adult literacy education through effective collaborative relationships (Koloski, 1993).

RESOURCE SCARCITY

Depending on which allocation figures one chooses to accept, the resources allocated to adult literacy education range from abysmal to barely adequate. This point is driven home when the average expenditure per student per year of $248 in adult literacy education is compared to expenditures in elementary and secondary education, which in 1992 averaged $5,167 per student per year (Smith et al., 1994). Indeed, while the resources allocated to adult literacy education may be adequate to cover the direct cost of instruction, an examination of the nation's budget for adult literacy education leads one to conclude that there is very little capital to invest in infrastructure improvement or to finance innovation once instructional costs have been paid. As a case in point, a recent Congressional report (Office of Technology Assessment, 1993) concluded that the effect of meager funding on the technological infrastructure of adult literacy education has been significant.

> Hardware and software cost money. Even technology that is reasonably priced by the standards of public schools, small businesses, or middle income consumers may be out of range for literacy programs, since most cannot buy in quantity and thus take advantage of reduced prices.... Most literacy providers, especially small community-based organizations, cannot afford technology. The median annual technology budget of the technology-using programs in OTA's survey (those with less than 15 computers) was $500. (p. 213)

PART-TIME STAFF

Data from the NEAEP (Development Associates, 1992) show that "Most (over 80 percent) of the adult education instructors work part-time" (p. ii). Sixty-two percent of the part-time teachers work less than ten months per year; 63% teach only in the evening. While 81% of the full-time teachers have over three years of teaching experience, only 47% of the part-time teachers are as experienced. Forty-four percent of the full-time teachers have graduate degrees, 34% of the part-time teachers have graduate degrees. On the average, ABE programs use 48 volunteers, ASE programs use 37 volunteers, and ESL programs use 37 volunteers. The overwhelming use of volunteer hours is in individual tutoring (Development Associates, 1994, p. 45).

These data do not indicate that part-time teachers are poor teachers, nor do they suggest that part-time teachers care less for their students than do full-time teachers. Indeed, many part-time teachers make significant personal sacrifices in order to teach. Reliance on a part-time workforce, however, constrains staff development. As Tibbetts, Kutner, Hemphill, and Jones (1991) note,

> The part time nature of adult education services means that only part-time teachers are needed. With most adult education teachers employed full-time at other jobs, it is difficult to schedule training services that won't conflict with other adult education services or the full-time jobs of the teacher. (p.10)

Furthermore, because their primary professional affiliation is not in adult literacy education, many part-time teachers are more reluctant to make personal investments in professional development as adult literacy education teachers.

Use of part-time teachers also impedes intraprogram communication. Because part-time teachers generally teach their classes and then leave the teaching site, intercommunication between teachers is thwarted, and they tend to become isolated. As Fingeret (1992) writes,

> Teachers are often geographically isolated, working at satellite sites in public school buildings or community settings such as churches in which they are far from any central program office or the comradeship of fellow literacy workers.

Similarly, teacher turnover impedes knowledge production and sharing. Because the turnover rate for part-time teachers is higher than for full-time teachers, what part-time teachers learn from staff development and experience is more likely to be lost from the system.

Fragmentation of Service

A New Jersey policy paper (New Jersey Association For Lifelong Learning, 1990) noted that,

> On the state level, sixty three different programs provide funds for adult literacy education and job training. These programs are administered by more than six separate state departments, including the Departments of Education, Higher Education, Vocational Education, Labor, Human Services and Community Affairs. The same diffusion for responsibility occurs on the county and local levels. The outcome is that limited resources, lack of communication and "turf problems" are evident at every level of administration. (p. 3)

The problem depicted so graphically in New Jersey is national in scope (Beder, 1991; Chisman, 1990; Chisman & Woodworth, 1992; Office of Technology Assessment, 1993). As mentioned previously, part of the problem stems from the fact that JTPA, JOBS, and the AEA-supported adult literacy education programs are administered by different federal agencies with different missions—the Departments of Labor, Health and Human Services, and Education. Generally speaking, at the state level, the three programs are administered by the federal agency's state analogues. Each of the three programs has different eligibility and reporting requirements, and this causes considerable confusion at the local level, a situation that encouraged Robert Bickerton, the State Director of Massachusetts (Office of Vocational and Adult Education, 1991), to remark,

> The current 'patchwork quilt' approach to supporting Adult Basic Education services results in an unacceptable level of duplicative administrative tasks and the need to reconcile contradictory service criteria at the local provider level: e.g., a program may have to submit as many as seven or eight proposals to a variety of State and federal agencies for overlapping services; submit performance reports with different criteria for the same characteristics." (p. 16)

Some states have made substantial progress in reducing fragmentation of service and improving coordination (Alamprese, Brigham, & Sivilli, 1992)

and the advent of state workforce readiness "super councils," such as the State Employment and Training Commission in New Jersey, hold promise (New Jersey State Employment and Training Commission, 1992). Nevertheless, program fragmentation remains a substantial infrastructure issue for at least three reasons.

- *Fragmentation promotes administrative overload.* Because the federal adult literacy education program, JTPA, JOBS, and a host of smaller literacy-related programs are administered by different agencies and are authorized by separate legislation, they have different eligibility requirements, grant submission procedures, and reporting requirements. This places an extra administrative burden on state and local administrators who are already operating in resource-lean environments.
- *Fragmentation inhibits holistic client service.* To address the multiplicity of problems that face them—problems such as need diagnosis, child care, job training, job placement, and adult literacy education—clients often must engage several different agencies, each with different operating procedures and locations.
- *Fragmentation thwarts interprogram communication and cooperation.* Because the organizational cultures, administrative procedures and missions differ substantially between JOBS, JTPA, and adult literacy education, communication between these agencies is problematic unless coordinating structures have been put in place.

Alamprese, Brigham, and Sivilli (1992) note four conditions for effective coordination to occur: (a) organizational structures must be created or altered to initiate and facilitate coordination, (b) state and local officials must exhibit effective leadership, (c) technical assistance must be provided in order to build the skills that coordination requires, and (d) an agency or individual must function effectively as the negotiator.

STRUCTURAL MARGINALITY

In his classic 1956 study of the California adult education system, Clark introduced the concept of marginality into the literature of adult education (Clark, 1956). Marginality implies that adult education agencies generally experience a weak power position in relation to parent agencies that sponsor adult education activities, be they public schools, higher education institutions, or other organizations. The term *structural marginality* as used here suggests that while marginality is a major concern, the causes have little to do with the social importance of adult literacy or the quality of leadership in the field. Rather, marginality is a function of the position adult literacy education occupies within the national and state bureaucracies to which it reports.

At the national level, the AEA-supported program is a $305 million dollar program located in the Department of Education, which primarily serves elementary, secondary, and higher education with a budget many times more than the adult education budget. At the state level, state adult literacy offices are typically located in the lower bureaucratic echelons of state departments of education, which have K–12 education as their primary concern (Beder, 1995).

Local programs are typically operated by school districts for which adult education is an ancillary, rather than central, function.

Structural marginality makes it difficult for adult literacy education to compete with less marginal programs for scarce resources, and it makes adult literacy particularly vulnerable to shifts in the political system. For example, in New Jersey, the State Council on Adult Education and Literacy was co-chaired by the governor's wife. After considerable deliberation, the Council made recommendations for a major reform of the adult literacy system that were supported by the field and state office. However, just as the governor was poised to implement them, he lost the election. The recommendations were ignored by the new governor and the State Council on Adult Education and Literacy has not met since (Beder, 1995).

Because of structural marginality, adult literacy education policy is sometimes "driven" by the policies of more influential organizations and programs. As a JOBS administrator in a northeastern state remarked,

> We were the biggest piece of the pie. The JOBS program in this state is $102 million. We said we are driving the system, and if you want to do business, here are the terms. Even with the recession, we have not relaxed our standards. We believe it's our portion of the pie that allows those agencies to sustain themselves. If you do not want to do business with us, that's OK. We will do it somewhere else. (Beder, 1995, p. 84)

CONSEQUENCES OF A WEAK INFRASTRUCTURE SYSTEM

Given the preceding discussion, it is reasonable to conclude that, by and large, the infrastructure system for adult literacy education is at best rudimentary. Development has been constrained by insufficient funds, the prevalence of part-time programming, service fragmentation, and structural marginality. This, it will be argued, has had a deleterious effect in three important areas: local programs' capacity to innovate and develop, the transmission of knowledge and critical information, and knowledge production.

LOCAL PROGRAMS' CAPACITY TO INNOVATE AND DEVELOP

In a 1974 study of the national adult literacy experimental and demonstration projects, Darkenwald, Beder, and Adelman (1974) found that the major determinants of innovation in adult literacy education programs were the program director's professionalism, program size, program affluence, and the extent to which staff felt secure in their jobs. Major barriers to innovation were found to be insufficient staff time, insufficient funds, need for staff retraining, and insufficient information. Taken together, insufficient funding, difficulty in training part-time staff, the tendency of part-time staff to identify professionally with their full-time positions, high staff turnover, poor intraprogram communication, and a general feeling of

insecurity among staff greatly diminished the capacity of local adult literacy programs to innovate and develop. Twenty years later, there is little evidence that things have changed substantially. As has been documented in previous sections of this paper, adult literacy education programs are still predominantly part-time, staff turnover is high, the preponderance of programs are small, and funding is meager. Moreover, given the funding cuts that are looming, it could be expected that feelings of insecurity would be high.

Low capacity is evidenced in the NEAEP's description of their problems in collecting data.

> Some programs did not have information on the composition of staff or the nature of instruction provided at different sites. Nor did many programs have any precise idea of the number of adults newly enrolled each year or the number of given individuals enrolled at any given time or over the period of a program year.... Key personnel and the location of instructional sites changed during the course of the study in many projects. Within 6 months of data collection, for example, 16 percent of program directors trained in the requirements of the study had departed, sometimes because their positions had been abolished. (Young et al., 1994, p. 6)

Clearly, local capacity is one of the most serious infrastructure problems that we face, both historically and today. Does it make sense, for example, to mandate idealistic performance standards unless local programs have the capacity to achieve them, or to invest in research and development unless local programs have the capacity to use the products that research and development produces? Ignoring the local capacity issue is a little like a developing country that invests in bridges and electrification when its population is too unhealthy and poorly educated to work.

How can local capacity be improved? One obvious answer is to increase funding at the local level, but given the mood in Congress and most state legislatures, it is more likely that funds will be reduced than increased in the near future. The second option is to consolidate scarce resources into smaller numbers of local programs of higher capacity. The state of New Jersey, for example, funds about 160 local programs, many of which operate only in the evening (Beder, 1995). Were this number reduced to 50, the funds allocated to the 110 de-funded programs could be used to hire full-time staff, purchase technology, provide supportive services, and to fund teachers' staff development activities in the 50 consolidated programs. Although fewer learners would be served in New Jersey, and although some learners would have to travel greater distances to an instructional site, consolidation may be the only recourse if local capacity is to be improved.

Transmission of Knowledge and Critical Information

It is axiomatic to say that knowledge and critical information are crucial to effective planning, policy formation, and program improvement. Yet knowledge cannot be used unless it is transmitted. Rogers and Kincaid (1981) have noted the important role that social networks play in knowledge transmission, particularly in respect to transmission of knowledge gained through experience among practitioners. Staff turnover, however, upsets the

stability of social networks, and the reality that part-time teachers typically arrive, teach, and then leave, inhibits the formation of those networks.

Staff development may well be the most important formal mechanism for knowledge transmission in adult literacy education, but as Fingeret (1992) points out, lack of a career path and compensation based on skill suppresses teachers' motivation to participate in staff development. Moreover, staff development is often short term and lacks relevance to teachers' needs and concerns (Tibbetts, Kutner, Hemphill, & Jones, 1991). If legislation currently working its way through Congress passes, the state literacy resources centers will lose funding and the Section 353 set aside for staff development may be abandoned. The implications for staff development are dire.

If staff development is to improve, more incentives must be created to motivate teachers' participation. Minimally, this includes paying teachers to attend staff development. Ideally, to encourage personal investment in staff development, career ladders would be established whereby more skilled teachers would be assigned additional responsibilities and would be paid accordingly. Rather than being a piecemeal collection of short-term experiences, comprehensive staff development systems must be designed that include protracted experiences for major skill development and short-term experiences as refreshers, for the sharing of experience and the practicing of new skills.

The social networks that are so important to the transmission of practice-based knowledge can be developed and supported through a form of staff development that is sometimes called inquiry-based or reflective staff development. In this model, which is advocated by specialists such as Lytle, Belzer, and Reumann (1993) and Fingeret (1992), groups of teachers work together to identify problems and to generate the knowledge needed to solve them. The process begins with groups of teachers identifying problems that need to be resolved in their work, thus insuring the relevance of content. Teacher groups then gather information pertinent to the problems identified (often through participatory research), develop a problem-solution strategy through collective reflection, implement solutions, assess their success, and feedback the results of assessment into the reflective staff development process. Such a model is being used in Massachusetts' SABES staff development program and to some extent in Virginia.

KNOWLEDGE PRODUCTION

There are two overlapping knowledge production systems in adult literacy education, and both are important. The first is the formal knowledge production system comprised of research and development agencies such as NCAL, universities, and firms under contract to the U. S. Department of Education. The second is a practice-based knowledge production system through which teachers and administrators systematically share knowledge gained from experience.

THE FORMAL SYSTEM

Upon reviewing the research literature of adult literacy education in 1984, Fingeret wrote:

> The literature in adult literacy education is voluminous, conveying the image of a substantive and useful knowledge base. However, a glance through an extensive bibliography, such as that generated through a thorough ERIC search, leaves the reader immersed in acronyms and discrete, site-specific reports that are difficult to relate to each other or to the planning of future efforts. In addition, the literature is spread over a range of disciplinary perspectives, confounding the difficulty of addressing such specific questions as "how do adults read?" (Fingeret, 1984, p. 3)

Although the situation that Fingeret characterized has improved somewhat since 1984, it is still true that the formal knowledge production system has failed to answer such fundamental questions as "How do adults read?" or "What kinds of instructional strategies work best under given conditions?" Many of the reasons for this failure have to do with infrastructure and include the following assessments:

- It has been very difficult to collect data from learners over time because most adult literacy education programs have open access (i.e., learners may enroll at any time), and because of high attrition rates. As a case in point, although in order to measure learning gain the NEAEP pretested 8,581 learners, usable posttest data could be obtained from only 601 (Young et al., 1994).
- It has been impossible to answer the fundamental question "what works?" through systematic research because there are no commonly accepted learning outcome measures in adult literacy education. The status of learner testing is a case in point. About 84% of the nation's ABE programs test learners for one purpose or another, most typically placement. The tests used vary widely, however. Sixty-eight percent use the Test of Adult Basic Education (TABE), 23% use the Slosson Oral Reading Test (SORT), 21% use the Adult Basic Learning Examination (ABLE), 20% use the Wide Range Achievement Test, 14% use the Comprehensive Adult Student Assessment System (CASAS), and 31% use locally developed tests (Development Associates, 1992). Even when tests are used, they often do not reflect the content of instruction and are therefore inappropriate for use as outcome measures. Test administration is often sporadic.
- Many local programs lack the capacity to keep accurate records or to maintain systematic posttesting programs.
- There has been a paucity of funds available to support basic research in adult literacy education.

In the past several years, substantial progress in knowledge production has been made in policy-oriented research and in synthesizing research. With

respect to policy research, under the mandate from the Adult Education Act the U.S. Department of Education has awarded several large contracts for research designed to inform national policy formation. These include the NEAEP, projects on staff development and performance indicators awarded to Pelavin Associates, and the National Adult Literacy Survey (NALS) awarded to the Educational Testing Service. NALS, which was administered to a national sample of over 26,000 adults, is particularly noteworthy (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). Because NALS included a test of adult literacy, as well as a wide range of social, demographic, and economic variables, the data can be used to address a wide range of questions important to adult literacy education.

Most of the policy-oriented research funded by the U.S. Department of Education was predicated on the assumption that the federal adult literacy program authorized by the Adult Education Act would remain intact. If current changes under consideration in Congress come to fruition, however, the long-term utility of this research will be called into question. Advances in synthesizing research have come largely through the work of NCAL, which has published numerous reports designed to pull together what is known on various topics.

THE PRACTICE-BASED SYSTEM

Much of what we know about adult literacy education is vested in the experience of those who have worked in the field, but for this knowledge to benefit others, it must first be transmitted and validated. While the problems with transmission have already been discussed, validation is equally important. How do we know that the knowledge gained from one's experience represents valuable practice or can be useful elsewhere? Although formal evaluation is one answer, evaluation research is expensive and time consuming. Another recourse is collective critical reflection (Freire, 1970; Usher & Bryant, 1989), a process through which practitioners share their experience and evaluate its utility through dialogue. Informally, this type of validation takes place at professional conferences and meetings, and, as previously mentioned, within some staff development projects such as Massachusetts' SABES, which have implemented formal mechanisms for collective critical reflection. The problem is that the infrastructure of adult literacy education simply does not support the face-to-face interaction among practitioners that is so necessary if this kind of validation is to take place.

ISSUES RAISED BY RECENT LEGISLATIVE INITIATIVES

Until recently, the basic structure and purpose of the Adult Education Act have changed little since its inception in 1966. Indeed, the fundamental problems and issues concerning the infrastructure of adult literacy education have been remarkably consistent over the past 20 years. With the advent of the Republican-controlled Congress in 1995, however, major changes have been proposed and many are likely to be enacted. These changes include

moving from a federally administered state grant system to block grants, a reduction in funding and resources available for infrastructure, and changes in eligibility requirements. While at this point it is impossible to predict the form that the new legislation will take, many of the proposals for change raise issues that directly bear on infrastructure and the themes that undergird this paper.

Block Grants

If adult literacy education were "block-granted," the current federally administered system of grants to states would be substantially altered or totally abandoned. Instead, funds would be directly allocated to the states for the general purpose of adult literacy education and the states—the governor's office in most proposals—would have wide latitude in defining adult literacy education, determining eligibility requirements, and configuring the delivery system. Proponents of block grants claim that this method of funding would promote coordination of literacy-oriented services by eliminating federal bureaucratic constraints and would allow states to target their literacy dollars on areas of state and local priority need. These arguments have some merit. Indeed, the infrastructure system for adult literacy has been characterized in this paper as being fragmented and in great need of coordination. It has also been noted that adult literacy education needs vary greatly from state to state.

Critics of the block-grant approach to funding, however, fear that under block granting, adult literacy funds would be diverted by states to non-literacy programs that have more political influence. Furthermore, the across-state infrastructure represented by such agencies as the U.S. Department of Education's Office of Vocational and Adult Education, NIFL, and NCAL is likely to be disrupted or entirely lost. Minimally, it could be expected that the current delivery system administered by state departments of education, which makes subgrants to local education agencies, would change as authority for decision making moved from state education departments to governor's offices or their designees. In the short term, it could be expected that the infrastructure system for adult literacy education would be disrupted. Only time could tell whether or not a more effective infrastructure system would evolve.

Resources

Under most proposals, funds for adult literacy education would be reduced as part of the general strategy to reduce the federal deficit. Given the centrality of the resource issue for infrastructure effectiveness as portrayed in this report, the implications are clear. Specifically, under most current proposals, the 353 set aside for research, demonstration, and staff development and the provision for state adult literacy resource centers would be eliminated or significantly reduced, thus jeopardizing the only federal source of funding especially targeted to infrastructure. Currently the AEA contains a maintenance-of-effort clause that prohibits states from reducing their state allocations to adult literacy education if they wish to receive federal funds. If this clause were absent from future legislation, then erosion of state funding could be expected, especially in states with budget problems.

Eligibility for Service

Under the AEA, the statement of purpose and the definition of adult literacy is so broad that virtually any adult who feels a personal need for service is

eligible to participate. There are at least two scenarios that could change this. The first is that under a block-grant system states might choose to narrow eligibility requirements so as to include specialized groups—the unemployed or welfare recipients, for example—and exclude others such as English-as-a-second-language students. The second scenario is that the adult literacy education legislation would be attached to larger legislative initiatives—welfare reform, for example—and that adult literacy would "inherit" the eligibility requirements of the parent act. Major changes in program eligibility could render many current staff development systems, research, and demonstration products obsolete, thus creating whole new needs in these areas at a time when the infrastructure system was too disrupted to meet them effectively.

CONCLUSIONS AND RECOMMENDATIONS

It has been argued here that the infrastructure system for adult literacy education is weak and that this weakness has constrained adult literacy education's ability to grow, to develop, and to serve learners more effectively. It follows that the infrastructure system must be improved if both society and individual learners are to reap full benefit from adult literacy education. For improvement to occur, at least three things must happen. First, local capacity for knowledge utilization, adoption of improved practices and technologies, and for meaningful staff intercommunication must be increased substantially. Second, the structures that constitute the "architecture" of infrastructure must be strengthened and created where they do not exist. Third, the infrastructure system needs to be better integrated and coordinated. Clearly, if these imperatives are to be met, more resources must be allocated to infrastructure development.

LOCAL CAPACITY

As the data presented in this report suggest, the weakest link in the adult literacy infrastructure system exists at the local program level. Local capacity to utilize knowledge and to adopt beneficial practices is constrained by a predominately part-time work force, high staff turnover, inadequate funding, and poor inter-staff communication. There are essentially two ways this situation might be ameliorated. The simple solution would be an infusion of resources designed to eliminate the constraining factors. Although simple, this solution is probably unrealistic. The second solution would be to reduce the number of funded programs, thus freeing funds for investment in a smaller number of high capacity programs. While under the second option, program capacity would likely increase, fewer learners would be served.

The relationship between local capacity and staff development is critical. On one hand, low local capacity reduces the demand for, and participation in, staff development. On the other, staff development is a powerful strategy for increasing local capacity. To be an effective component of adult literacy education infrastructure, and to enhance local capacity, staff development

must be more than a series of short workshops. Staff development should also provide protracted learning experiences for teachers who have no experience in adult literacy education and who need to develop foundational knowledge and skills.

The quality and quantity of staff development is likely to increase if the demand for staff development increases. To this end, staff development should be conceived as part of a comprehensive approach to employee development. To motivate teachers' investment in their own professional development, career ladders within adult literacy education should be established and employee compensation systems that reward teachers for successful experience and acquired knowledge should be implemented.

Strengthening Structures

In recent years, especially since the 1991 amendments to the AEA, important new elements of infrastructure have been added to the adult literacy education system. These include the National Institute for Literacy, state literacy resource centers, NCAL, and several well-funded policy research projects. In addition, several computer-based information resources and listservs have made relevant information available to any professional with a personal computer and the will to use it. Yet while these structures now exist, their low funding levels have precluded substantial impact, and many are in jeopardy of being eliminated through new legislation. The health of the infrastructure system depends on the retention of these agencies, or new agencies like them, and they must be funded at levels that permit impact.

The "architecture" of the infrastructure system should facilitate communication in two directions. First, information must flow from researchers, developers, planners, and policymakers to local program staff so they can act upon it. Indeed, structurally speaking, the current system established by the 1991 amendments to the AEA was designed to accomplish this. Second, however, the system must provide for a flow of information upwards, from local programs to those who conduct R&D and formulate policy. The upward flow of information is vital if policies are to be established on solid information, R&D products are to meet programmatic needs, and knowledge gained by teachers through experience is to be shared.

Given low local capacity, the upward flow of information is particularly problematic. Infrastructure needs to be built among practitioners at the local level. In this regard, experiments in participatory forms of staff development are promising. In this form of staff development, teams of teachers identify problems together, acquire knowledge needed for problem solution, establish strategies for action, evaluate results, and disseminate the fruits of their experience. Anecdotal evidence suggests that not only do teachers learn from such a model, but that in the process professional social networks are also created that serve as effective elements of local level infrastructure.

Coordination and Integration

Although programmatic fragmentation has been a problem that many have acknowledged to be serious, little headway has been made in resolving it. Furthermore, it is impossible to predict whether the major changes in the adult

literacy education delivery system that are likely due to Congressional action will promote coordination and integration or exacerbate the problem.

Coordination and integration must be accomplished in three ways. First, at the national and state levels, the configuration of the infrastructure system must be carefully planned in a manner similar to the way in which an architect organizes the elements of a building to maximize form and function. Unfortunately, however, there is little evidence that infrastructure design has been a major consideration in legislative proposals now pending in Congress. Second, incentives need to be established to promote voluntary cooperation, coordination, and integration. Agencies that comprise the infrastructure system need to be rewarded for sharing information rather than for hoarding it. Grant funds need to be made available to stimulate research and dissemination. Computer technology needs to be more fully used to create shared management information systems that can be used by, and benefit, a multiplicity of adult literacy education agencies. Finally, coordinating agencies need to be established that have the authority to negotiate cooperative relationships among agencies within the system and the power to remove structural and bureaucratic impediments to cooperation.

The infrastructure for adult literacy education can be improved, but only if doing so becomes a major priority. Certainly there are many forces that mitigate against such a priority, forces that include inadequate funding and insecurity about the future in a time of great change. Yet the infrastructure of adult literacy education is like the framework that enables a building to stand. If the framework is not strong, the building will be weak and may in time collapse.

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